



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,211	12/11/2003	Naiyong Jing	59455US002	7997
32692	7590	04/27/2005	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			MCCLENDON, SANZA L	
			ART UNIT	PAPER NUMBER
			1711	

DATE MAILED: 04/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/733,211

Applicant(s)

JING ET AL.

Examiner

Sanza L McClendon

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 and 23-43 is/are rejected.
- 7) ☒ Claim(s) 22 and 44 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9-8-03 and 6-24-1-2/05 + 404 + 304
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

1. Claims 1-21 and 23-43 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3, 7-22, 28-32, 36-51 and 57-58 of copending Application No. 10/712,590 in view of Asawa et al (JP 54-052690). 10/712,590 teaches methods of making crosslinked polymers the substantially overlap in scope with the instant invention. The primary difference is the form of radiation used in the crosslinking step (b)—ultraviolet for the instant invention and electron beam for 10/712,590. However, Asawa et al teaches methods of making crosslinking similar fluorine-containing polymers having sulfonyl pendent groups and halogen pendent groups using ultraviolet radiation. Therefore the examiner deems the instant invention is obvious from the combination of reference.

This is a provisional obviousness-type double patenting rejection.

2. Claims 1-7, 10-12, 15-17, 20-21, 23-29, 32-34, 37-39, and 42-43 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3, 5-14, 18-22, 24-33 and 37-38 of copending Application No. 10/712,361 in view of Asawa et al (JP 54-052690). While these claims are not identical they appear to overlap in scope. The primary differences are the tetrafluoroethylene backbone, the second pendent group including a

Art Unit: 1711

halogen and the irradiation type used in step (b). 10/712,361 is taught in the disclosure to preferably have a tetrafluoroethylene backbone. In addition, 10/712,361 does not positively exclude of the pendent groups, such as halogen groups. It is known in the prior art (JP 54-052690) to produce similar types of fluorine-containing polymers having sulfonyl pendent groups by copolymerizing fluorinated monomers having SO₂X groups, vinyl-ether monomers comprising halogen atoms, such as iodine, and fluorinated olefins—see Asawa et al—of which once polymerized are taught to be crosslinked by exposure to ultraviolet radiation. Therefore the examiner deems that the combined references render the instant invention obvious.

This is a provisional obviousness-type double patenting rejection.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2, 4-6, 10-11, 23-24, 27-28 and 32-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Asawa et al (JP 54-54-052690).

a. The portions of JP 54-052690 used are from a machine-translated abstract.

Asawa et al teaches improved fluorine-containing cation exchange membranes. Said membranes are obtained by casting and then crosslinking a fluoro-polymer using ultraviolet radiation. Said polymer is prepared by copolymerization of an iodine-containing vinyl-ether, a fluorinated olefin, and a fluorine-containing monomer having an ion exchange group or functional group convertible to an ion exchange group. Per the abstract general formulas for the iodine containing vinyl ether, fluorinated olefin, and the fluorine-containing monomer can be found, wherein the polymer obtained from copolymerization appear to read on the fluorinated fluoropolymer as described in instant claims 1-2, 4-6, 10-11. Said membrane is formed by cast said monomer solution and crosslinking using ultraviolet radiation.

Art Unit: 1711

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-21 and 23-43 are provisionally rejected under 35 U.S.C. 103(a) as being obvious over copending Application No. 10/712,590 which has a common assignee with the instant application in view of JP 54-052690. Based upon the earlier effective U.S. filing date of the copending application, it would constitute prior art under 35 U.S.C. 102(e) if published or patented. This provisional rejection under 35 U.S.C. 103(a) is based upon a presumption of future publication or patenting of the conflicting application. 10/712,590 teaches methods of making crosslinked polymers the substantially overlap in scope with the instant invention. The primary difference is the form of radiation used in the crosslinking step (b)—ultraviolet for the instant invention and electron beam for 10/712,590. However, it is well known in the prior art to crosslink similar types of fluorine-containing polymers having pendent sulfonyl groups and halogen groups using ultraviolet radiation. Asawa et al teaches methods of making crosslinking similar fluorine-containing polymers having sulfonyl pendent groups and halogen pendent groups using ultraviolet radiation. 10/712,590 and Asawa et al are analogous art because they are from the same field of endeavor that is the art of crosslinking polymers for cation exchange membranes. Therefore the examiner deems that it would have been obvious for an artisan of ordinary skill in the art to use ultraviolet radiation for crosslinking said polymers as taught by Asawa et al. The motivation would have been a reasonable expectation of successfully obtaining a crosslinked polymer having excellent properties in exchange membranes as suggested by Asawa et al in the absence of evidence to the contrary and/or unexpected results.

This provisional rejection might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the copending application was derived from the inventor of this application and is thus not the invention "by another," or by a showing of a date of invention for the instant application prior to the effective U.S. filing date of the copending application under 37

Art Unit: 1711

CFR 1.131. For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).

4. Claims 1-7, 10-12, 15-17, 20-21, 23-29, 32-34, 37-39, and 42-43 are provisionally rejected under 35 U.S.C. 103(a) as being obvious over copending Application No. 10/712,361 which has a common assignee with the instant application in view of JP 54-052690 to Asawa et al. Based upon the earlier effective U.S. filing date of the copending application, it would constitute prior art under 35 U.S.C. 102(e) if published or patented. This provisional rejection under 35 U.S.C. 103(a) is based upon a presumption of future publication or patenting of the conflicting application. . 10/712,361 teaches methods of making crosslinked polymers the similar in scope with the instant invention. The primary differences are the tetrafluoroethylene backbone, the second pendent group including a halogen and the irradiation type used in step (b). 10/712,361 is taught in the disclosure to preferably have a tetrafluoroethylene backbone. In addition, 10/712,361 does not positively exclude of the pendent groups, such as halogen groups. It is known in the prior art (JP 54-052690) to produce similar types of fluorine-containing polymers having sulfonyl pendent groups and halogen pendent groups by co-polymerizing fluorinated monomers having SO₂X groups, vinyl-ether monomers comprising halogen atoms, such as iodine, and fluorinated olefins—see Asawa et al—of which once polymerized are taught to be crosslinked by exposure to ultraviolet radiation. Therefore it would have been obvious to a skilled artisan at the time of the invention to prepare a polymer for crosslinking by ultraviolet radiation for the teachings of the combined reference. The motivation would have been a reasonable expectation of obtaining a successfully crosslinked polymer having excellent mechanical properties when used as a cation exchange membrane as suggested by both references.

5. This provisional rejection might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the copending application was derived from the inventor of this application and is thus not the invention “by another,” or by a showing of a date of invention for the instant application prior to the effective U.S. filing date of the copending application under 37 CFR 1.131. For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Art Unit: 1711

Allowable Subject Matter

4. Claims 22 and 44 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sanza L McClendon whose telephone number is (571) 272-1074. The examiner can normally be reached on Monday through Friday 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sanza L McClendon

Examiner

Art Unit 1711

SMc